

Claims

We claim:

1. An MPEG-2 video decoding method for providing enhanced trick mode playback of a video stream, comprising:

providing a first buffer and a second buffer within an MPEG-2 decoder, wherein the first buffer has a first pointer that is associated with a first address, and wherein the second buffer has a second pointer that is associated with a second address;

locking the first pointer and the second pointer in place by disengaging a frame synchronization signal within the MPEG-2 decoder; and

decoding a set of frames of the video stream to the first buffer and the second buffer in an alternating fashion by continuously swapping the first address and the second address.

2. The method of claim 1, wherein disengaging the frame synchronization signal allows the set of frames to be decoded at a rate faster than a single frame time.

3. The method of claim 1, further comprising:

synchronizing a display pointer within the MPEG-2 decoder with the first address;
and

reading the decoded set of frames out of the first buffer and the second buffer in the alternating fashion based on the display pointer.

4. The method of claim 1, wherein the first buffer is a current buffer and the second buffer is a past buffer.
5. The method of claim 1, wherein the first address and the second address are continuously swapped by microcode within the MPEG-2 decoder.
6. The method of claim 1, wherein the set of frames comprises at least one I frame and at least zero P frames.
7. The method of claim 1, wherein the MPEG-2 decoder further comprises a third buffer, and wherein the set of frames are decoded to the first buffer, the second buffer and the third buffer in the alternating fashion by continuously swapping the first address, the second address and a third address.

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8. An MPEG-2 decoder for providing enhanced trick mode playback of a video stream, comprising:

a first buffer and a second buffer, wherein the first buffer has a first pointer that is associated with a first address, and wherein the second buffer has a second pointer that is associated with a second address; and

microcode for locking first pointer and the second pointer in place by disengaging a frame synchronization signal within the MPEG-2 decoder, and for continuously swapping the first address and the second address so that a set of frames of the video stream comprising at least one I frame and at least zero P frames can be decoded to the first buffer and the second buffer in an alternating fashion.

9. The MPEG-2 decoder of claim 8, wherein disengagement of the frame synchronization signal allows the set of frames to be decoded at a rate faster than a single frame time.

10. The MPEG-2 decoder of claim 8, wherein a display pointer within the MPEG-2 decoder is synchronized with the first address, and wherein the decoded set of frames is read out of the first buffer and the second buffer in the alternating fashion based on the display pointer.

11. The MPEG-2 decoder of claim 8, wherein the first buffer is a current buffer and the second buffer is a past buffer.

12. The MPEG-2 decoder of claim 8, wherein the set of frames are part of a group of pictures with a set of B frames.

13. The MPEG-2 decoder of claim 8, wherein the MPEG-2 decoder further comprises a third buffer, and wherein the set of frames are decoded to the first buffer, the second buffer and the third buffer in the alternating fashion by continuously swapping the first address, the second address and a third address.

14. An MPEG-2 buffer scheme for providing enhanced trick mode playback of a video stream, comprising:

a first buffer having a first pointer that is associated with a first address; and

a second buffer having a second pointer that is associated with a second address, wherein the first pointer is locked to the first buffer and the second pointer is locked to the second buffer, and wherein a set of frames of the video stream comprising at least one I frame and at least zero P frames is decoded to the first buffer and the second buffer in an alternating fashion based on a continuous swapping of the first address and the second address.

15. The MPEG-2 buffer scheme of claim 14, wherein the first pointer and the second pointer are locked in place based on a disengagement of a frame synchronization signal.

16. The MPEG-2 buffer scheme of claim 15, wherein the disengagement of the frame synchronization signal allows the set of frames to be decoded at a rate faster than a single frame time.

17. The MPEG-2 buffer scheme of claim 14, further comprising microcode for continuously swapping the first address and the second address.

18. The MPEG-2 buffer scheme of claim 14, further comprising a display pointer, wherein the display pointer is synchronized with the first address, and wherein the decoded set of frames is read out of the first buffer and the second buffer in the alternating fashion based on the display pointer.

19. The MPEG-2 buffer scheme of claim 14, wherein the first buffer is a current buffer and the second buffer is a past buffer.

20. The MPEG-2 buffer scheme of claim 14, wherein the set of frames are part of a group of pictures with a set of B frames.

21. The MPEG-2 buffer scheme of claim 14, further comprising a third buffer, wherein the set of frames are decoded to the first buffer, the second buffer and the third buffer in the alternating fashion based on a continuous swapping of the first address, the second address and a third address.